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THE WATER-RAT, *HYDROMYS CHRYSOGASTER* (MURIDAE) ON DORRE ISLAND, W.A.

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During 1986 and 1987, four trips were made to White Beach on Dorre Island, Shark Bay, to carry out research into the ecology of the Western Barred Bandicoot (*Perameles bougainville*). We arrived at the beach on the last of these visits on 18 August 1987. On landing, we saw in the sand a number of tracks made by a medium-sized mammal other than those - previously recorded from the island *Lagorchestes hirsutus*, *Lagostrophus fasciatus*, *Bettongia lesueur* and *Perameles bougainville* (Ride and Tyndale-Biscoe 1962). Over the course of the previous visits we had become familiar with the tracks of the other mammals, but had not seen these particular prints before.

On 19 August, at about 2130H, one of us (NDT) was returning to our campsite on the beach when he saw in the light of his head-torch a water-rat (*Hydromys chrysogaster*) about 20 metres from the cliffs at the southern end of White Beach. On the following night at 0230H we both saw a water-rat (presumably the same individual) in virtually the same place. On both occasions, the animal was foraging along the strand-line in washed-up seagrass. Under observation by head-torch, it walked along the sand towards the cliffs, climbed onto the rocks at the cliff-base, then disappeared under a rock ledge. The water-rat was observed at a distance of 10-15 metres for at least 30 seconds on both nights, allowing us ample opportunity to note its distinctive features. These included its size, its gait, the shape of its head and the taper of the hind-quarters out to the base of the tail. The tail itself was covered with dark fur and bore an obvious white tip. The overall colour of the pelage appeared to be dark brown.

Hydromys chrysogaster is widespread in coastal and inland parts of northern and eastern Australia and in New Guinea and its adjacent islands, and is present in Western Australia in the north-west and the south-west (Olsen 1983). It has been recorded from Barrow Island (Butler 1970), the - Montebello Islands (Butler 1970; Burbidge 1971) and Depuch Island (Ride 1964). This is the first record of the species on 1000 km of coastline - between Moore River and Barrow Island.

Our sighting of water-rat tracks on White Beach only on our fourth visit, despite close attention to mammal tracks on previous occasions, leads us to

conclude that this individual had taken up residence on the beach since our third visit in March 1987. The lack of any previous record of the species from Dorre Island or nearby Bernier Island despite numerous visits by biologists, suggests that its presence there is a recent and perhaps transitory phenomenon.

If water-rats had been regularly using the islands' few beaches, which are preferred expedition campsites, one would surely have been encountered before. If the rocky shores and inshore reefs on the western side of the islands were the preferred habitat, however, sightings might be less likely. Butler (1970) trapped *Hydromys* on rocks at tide level on Barrow Island.

Whether or not there is a permanent presence of *Hydromys* on Dorre Island, the existence of a population somewhere in the Shark Bay area is indicated. The water gap between Dorre and Dirk Hartog Islands is approximately 26 kilometres wide and is unlikely to be crossed frequently even by these strong swimmers. Dirk Hartog Island is only two kilometres from Edel Land, so its shores could be colonised quickly by an expanding *Hydromys* population on the mainland. Biological surveys of that island, however, have not recorded the species (Burbidge and George 1978).

Shark Bay lies midway between the previously recorded north-western and south-western ranges of *Hydromys chrysogaster*. Animals from the Kimberley and Barrow Island are much lighter in colour than those from the south-west (Ride 1964; Butler 1970). Our observations suggested that the Dorre Island specimen belonged to the dark chocolate-brown form found in the south-west. Further survey may reveal water-rat populations between Shark Bay and Moore River.

Note added in proof:

During a visit in August 1988, *Hydromys* tracks were again seen on White Beach. They were also found on two beaches immediately to the north, including one set 1 km from the original sighting.

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